

child in the city has to attend school or explain its absence. I believe even the Prince of Wales's children were called upon. I feel the want of such employment here to some extent, although I have not been idle by any means as pastor of the Brick Church; but it would not be liked, I am sure. You Americans are far more conservative than Englishmen, and we, who feel it in every-day life, do not always like it. I was asked to go to a great meeting on a public topic soon after I got here, and went to find that all I was expected to do was to open the meeting with a prayer and close it with a benediction. I was dumfounded."

There are probably few American ministers who would not take exception to every one of these generalizations. We suspect that there is, neither in England nor in America, anything like positive expectation on the part of the public, or on the part of his own congregation, that a minister's activity shall display itself in fields outside his professional work. We question much whether in either country a congregation has ever been dissatisfied with a minister on this score. There are and have been in London several eminent Dissenting ministers who have displayed no such activity—Mr. Spurgeon is one—without causing any apparent disappointment to their admirers. Is it not true that in both countries the matter is left to the minister's own temperament, and ambition, and intellectual needs? If he busies himself with politics or philanthropy, the congregation says, Well and good. If he confines himself to purely professional work, it also says, Well and good. In this country, ministers who have the health, the capacity, and the overmastering impulse to go outside their churches and occupy themselves with education, charities, and temperance abound everywhere. Every city of any size can show some. In New York there are many. We suspect that the churches of both the late Dr. Bellows and of Henry Ward Beecher have been rather disposed to think that their pastors did too much during the last twenty years of the very kind of work which Dr. Bevan complains that he cannot get at all. But it is a kind of work which neither in this country nor in England is forced on any man, either lay or clerical. Every professional man gets as much of it as he asks for—no more, but no less. If a minister goes to many public meetings without being invited to do more than pray and pronounce the benediction, he may be sure that it is because he has given no recognizable sign of desiring a more prominent part. The American demand for oratorical thunder and organizing activity is practically unlimited.

As regards clerical participation in politics, Dr. Bevan's remarks have a good deal of force. There is little question that in the large cities, and especially in this city, the caucus is an all but insurmountable barrier to anything like active participation in politics on the part of educated men of any calling. In the first place, the platform talk of a man who neither goes to caucus nor controls the daily press has comparatively little weight with the class who make up political conventions. It goes in at one ear and out at the other, and they privately ridicule him as a theorist or doctrinaire. In the second place, an honorable and educated man cannot participate in a New York caucus without exposing himself either to humiliating defeats, or to apparent participation in acts and practices

which are revolting to his moral sense. If he continues to attend it constantly without lowering his standard both of private and political integrity, he rapidly becomes an object of ridicule to the "workers," and, if he is worth much to the community, soon reaches the conclusion that his time can be far better employed in his study than at the primary. In England, where the caucus is not yet established, and the office-holders do no political work, volunteers of all classes are more necessary and more welcome in politics than here, and ministers may if they please be as active politically as they used to be in New England, and in some parts of it are still. In fact, it is of the utmost importance to every democratic community that its professed moralists should not be excluded from politics, but should, on the contrary, take an active part in them. Nothing but good can come of it if the machinery is such that it can be worked just as easily by the honest men as by the knaves.

THE VACCINATION QUESTION.

By J. S. Billings
THE recent epidemic of smallpox has had the usual effect of calling public attention to the merits of vaccination, and of producing a large amount of discussion upon the subject. The parties to this discussion represent every possible shade of opinion. Some declare that vaccination has not only not diminished, but has actually increased, the virulence and fatality of smallpox, while it has been the means of spreading syphilis, scrofula, and other similar diseases. Others assert that it is an almost specific preventive of smallpox—that a person properly vaccinated is safe in a smallpox hospital filled with the worst form of cases, and that the operation is so simple and certain that it should be made compulsory and universal. The non-professional man is sometimes much puzzled to decide between these conflicting statements, and as to the reliability and true significance of the voluminous statistics which are produced on either side; and although in most cases he follows the majority, and has himself and his family vaccinated, or revaccinated, as the case may be, he nevertheless has some lurking doubts and fears as to the result, and as to whether the amount of protection obtained is worth the trouble and cost which it involves.

It seems worth while, therefore, to state briefly the opinions which prevail upon this subject among those physicians and statisticians who are generally recognized as scientific investigators, and as authorities in their respective departments. We must be guided by probabilities in this matter; and as we find that such physicians and statisticians as we have referred to are almost unanimous in their views upon certain points, and are only opposed in them by men who are not specially known as scientific men, but rather as popular agitators, the probabilities are largely in favor of the opinions which we summarize as follows:

Smallpox is a specific disease, produced by a special contagium which never arises spontaneously, but is always derived from a case of the disease. No combination of filth, overcrowding, bad food, temperature, moisture, etc., will produce smallpox in the absence of the specific contagium. Persons who have had the disease once rarely have it a second time, yet in violent epidemics the number of cases of second attacks may be as high as 6 per 1,000 of all cases, and 10 per cent. of these second attacks prove fatal. Persons of all ages and conditions of life seem to

be equally susceptible to the disease; but prior to the introduction of vaccination about 80 per cent. of deaths from smallpox occurred in children under 5 years of age. Smallpox, during the last century, caused about one-thirteenth of the total number of deaths, taking the statistics for long periods of years, and its epidemics swept over Europe at intervals varying from 5 to 10 years; that is, about as often as a fresh stock of susceptible material was produced by births.

Vaccination began at the commencement of the present century. At first it was supposed to be an absolute preventive against smallpox, and that if a person had the disease after vaccination, it was a proof that the operation had not been properly performed. It is now, however, well recognized that the protection produced by a perfect vaccination is not so thorough as that produced by an attack of smallpox, and that properly-vaccinated persons may not only be attacked by smallpox, but may die of it. Nor is the effect produced by vaccination a permanent one, its mean duration being usually estimated at from 9 to 10 years. Of 731 deaths in the Leipsic epidemic, there were 9 in persons under 10 years of age who had been vaccinated. Of 48 deaths in the Riverside Hospital, New York, 44 were unvaccinated, three were doubtful, and one had been vaccinated. In all countries where vaccination has been general, when an epidemic of smallpox occurs, the larger part of the cases are in vaccinated persons, the reason being that there are present a very much larger number of vaccinated than of unvaccinated persons. In such communities the greater number of deaths occur in persons over 25 years of age, instead of in children, as is the case in unvaccinated communities. Systematic revaccination renews the immunity for a term of years, and has a powerful influence in reducing the mortality among adults in communities where it is practised. This is conclusively shown by the statistics of the armies of the United States and of other countries.

Vaccination in some cases produces immediate bad results, but these are rare exceptions. It must be remembered that vaccination is usually performed in infancy, when disease and death are more frequent than at any other period of life, and we cannot expect that vaccinated infants will present any immunity from disease and death except so far as smallpox is concerned. It must not be concluded, therefore, that all cases of sickness and death following vaccination are caused by it; this is the old fallacy of *post hoc ergo propter hoc*. But in a very few cases vaccination produces disease. During the year 1877 there were in Prussia 1,252,554 vaccinations, and 41 deaths followed in these cases. An official investigation showed that in 42 cases this was merely a coincidence; in 2 cases the death was really due to the vaccination. The English reports show that in 2,000,000 vaccinations death resulted from the operation in 64 cases.

The greatest danger from vaccination is from the use of impure virus, and especially from virus taken from persons affected with syphilis. The total number of cases in which the transmission of syphilis by vaccination has been reported is about 750, and this in more than 100,000,000 cases of vaccination during the last 80 years. This danger is now totally avoided by the use of bovine virus. The possibility that bovine virus may be the means of transmitting tubercle has been suggested, but as yet there is no known authentic case of such transmission, and the danger must be very small. The chief evil to be feared from the use of bovine virus is erysipelas, and this may be due either to impure virus or to the condition of the person operated upon. There is

a very considerable quantity of impure virus in the market at the present time, more especially in the form of what are termed patent vaccine-cones and vaccine-powder; and in this country there is no satisfactory supervision of the quality of the virus used, except perhaps in the city of Providence.

The remote effect of vaccination is to increase the mortality from diseases other than smallpox: the children whom it preserves furnish additional material for the ravages of scarlet fever, measles, etc. It prolongs life, but, taking long periods of years into account, it does not diminish the total mortality. Those who do not die of smallpox must, sooner or later, die of something else. We have examined carefully the statistics presented by the anti-vaccinationists, and especially those given in the works of Prof. A. Vogt, of Berne, but we have found them entirely unreliable. In some of the few cases in which the references to the original data are given, the figures are incorrectly quoted; in others the calculations of ratios do not give the results claimed. For example, on page 168 of his larger work, 'Für und wider die Kuhpockenimpfung,' etc., he gives the following table:

MORTALITY FROM SMALLPOX AT GENEVA DURING 180 YEARS (1580 to 1760).

Age.	Mean population.	Mean number of deaths per annum from smallpox.	Proportion of deaths in 10,000 inhabitants (as given by Vogt)	True proportion.
0-5 years	1,383	30.37	87.6	219.6
5-10 "	1,163	5.88	20.3	50.6
10-15 "	1,058	0.70	2.6	6.6

The fourth column shows Vogt's calculation of ratios, and the fifth shows the true ratios. It is impossible to have the slightest respect for an author who is either so ignorant or so mendacious as to assert that the ratios stated in the fourth column are correct; and yet Vogt is the statistician *par excellence* of the anti-vaccinationists.

It seems clear enough that vaccination has preserved and prolonged many lives, and prevented a vast amount of blindness, deafness, and other afflictions which smallpox is so apt to produce when it spares life; and also that the evils which result from it are so very small in comparison with the good it has produced that no one need hesitate to avail himself of the protection it affords. On the other hand, there is no immediate prospect that it will enable us to stamp out smallpox, nor is it by any means an absolute safeguard; and when it comes to the question of making vaccination compulsory, we have to take into consideration a number of other things besides the mere efficiency of the vaccination itself. We cannot undertake to discuss the merits of compulsory vaccination within the limits of this article, and would only suggest at present that it is far more necessary in this country to provide some means by which all persons can obtain thoroughly reliable, pure vaccine, and also for the prevention of the sale of impure virus, than it is to secure compulsory vaccination; and that it is inexpedient to demand the latter until the former has been satisfactorily provided for. It is the compulsion that has produced most of the controversy. No doubt if a law had been passed forbidding vaccination, a certain number of the people who now oppose it would have organized into a society, started a journal, and vaccinated themselves and their children once a year, or oftener if necessary, to prove their abhorrence of compulsion.

THE ORGANIZATION OF COLLEGE FACULTIES.

THE growth of some of the larger of our universities is beginning to give especial interest to a question which for some years past has been receiving the thoughtful attention of the university authorities in the Old World. The multiplication of branches taught on the one hand, and the tendency toward a concentration of individual energies to the prosecution of special studies on the other, give rise to some considerations of not a little importance. What ought to be the organization of a large academic faculty? Should it be divided into separate schools, each school having plenary jurisdiction over the students and the affairs of that school, or should it maintain its organization in its integrity? Ought all of the numerous questions coming up for decision to be referred to the whole body of instructors, or ought the faculty to be subdivided into groups, to each one of which alone the particular questions appropriate to that group should be referred? Is it wise to encourage the organization of separate schools analogous to the Sheffield and the Lawrence Scientific Schools, or, on the other hand, is it better to keep all the officers of instruction within the general jurisdiction of a single organization? The importance of the subject increases as the number of officers in a faculty multiplies; and consequently, in some of the universities of Germany, where the philosophical faculty numbers a hundred or more members, it has become one of the vital educational questions of the day. As we go to Italy for the study of art, and as we go to England for the study of constitutional government, so we go to Germany for the study of educational theories and methods. The subject having recently attracted so much attention in Germany, it may be well to present some of its most important features.

As early as 1832 the several questions involved were discussed by Robert von Mohl in the first edition of his 'Polizei-Wissenschaft.' The ground was taken that studies in science and studies in philosophy and philology are so radically different that, sooner or later, those in control of educational matters would come to see that the interests of education require the organization of separate faculties. The next impulse to the policy of division was given at Giessen in consequence of the prominence to which scientific studies were raised by Liebig. In 1855 the Ministry addressed a note of inquiry to the philosophical faculty of that university, asking the members to consider whether the cause of education would be enhanced by a division of that body into two or more schools. The question was carefully discussed, and was decided in the negative. But the University Senate took the opposite view, and, by a very small majority, decided in favor of a division into three schools. The Ministry, however, took no action on the subject. But in 1863 the same question was successfully revived in the very university in which the first word had been spoken in its behalf. The party advocating division carried the day; and from the inaugural address of Hugo von Mohl, a brother of the famous economist and the first dean of the new scientific faculty, we learn that the division was brought about in consequence of a movement in the faculty of medicine.

The policy of division, however, though entered upon with enthusiasm by the University of Tübingen, was not adopted by the other universities. The Austrian Government inquired of the philosophical faculty of Vienna whether a division would be advantageous. The proposition was rejected by a large majority. The university at Breslau also considered the ques-

tion with the utmost care: for two full years it was under discussion. The policy of division at one time was adopted, but when the details came to be decided upon there was so much difference of opinion that the majority was reduced to a minority, and the proposition was at last rejected. Other universities considered the question with the same result. Although in several of them a strong party in favor of separate organizations was developed, yet in no one of them was the advocacy of change strong enough to overthrow the established order of things. Nevertheless, when the new University of Strassburg came to be established, the advocates of division once more carried the day. Though it might not be wise to change radically an organization already established, it still seemed best to the Government in the founding of a new institution to recognize the force of the argument in favor of separate organizations. The new university, therefore, was given not only a philosophical faculty, but also a faculty of mathematics and the natural sciences.

The universities of Tübingen and Strassburg are the only ones in which a complete division into separate faculties has taken place. In four of the universities the question was decided by adopting what may be called a medium course. These were the universities of Munich, Würzburg, Bonn, and Leipzig. At Munich a plan was adopted by which the faculty was to maintain its integrity for the discussion and decision of all questions of general policy, while at the same time it should be divided into two sections for the purpose of administering affairs of more specific interest. One section has charge of all matters pertaining to philosophy, philology, and history, while the other devotes itself to the interests of studies in mathematics and the natural sciences. Each section is organized under the direction of a dean; and the senior of the two deans presides at the meetings of the general faculty. A similar method of organization prevails at Würzburg, except that one dean only is chosen, whose duty it is to preside not only over the whole faculty, but also over each of the two sections whenever they are called upon to act in their separate capacities. The dean is chosen alternately first from the one section and then from the other. At Bonn and at Leipzig the question of organization was settled in a somewhat different manner. As early as 1834 a number of embarrassing questions touching the privileges of certain departments of study led at Bonn to a careful consideration of the matter of faculty organization, and the differences finally resulted in a compromise which, from that day to this, has remained undisturbed by any modification. The faculty preserves its integrity as a whole for the transaction of all business of a general character. For the superintendence of the work in the several branches of study, however, it is divided into four sections, each one having its presiding officer. Of these sections, the first has charge of all matters coming under the head of philosophy; the second, those pertaining to philology; the third, to history and political science; and the fourth, to mathematics and the natural sciences. At Leipzig the division is the same, except that philosophy and philology are grouped into one section or school. It is worthy of note that this plan of organization, in the course of the forty-five years that have elapsed since its adoption, has been so successful in its workings that no official proposition for changing it has ever been made.

At the inauguration of Prof. Hofmann, not long since, as Rector of the University of Berlin, the subject of his address was "The Question of Dividing the Philosophical Faculty" (*Die Frage der Theilung der philosophischen Facul-*